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High - Temperature - Smelting - Combustion  
The modern way of burning refuse !

A high - temperature - flame - chamber adapted to burn refuse of every kind and in any condition hygienically and most economical ! The origin of the waste whether it is household or industrial refuse does not matter. This flame - chamber is the "heart" of the so called FLK process. (Dr. Wotschke)

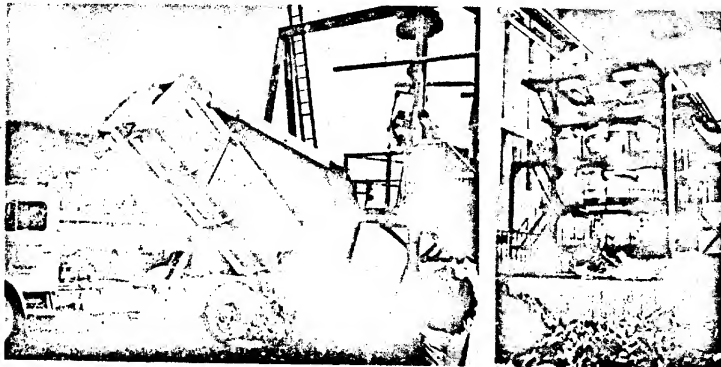


Fig. 1

Fig. 2

Fig. 1  
shows a small plant  
200 kg/hr capacity

Fig. 2  
shows a large plant  
5000 kg/hr capacity

In both cases the uncombustible leaves the flame-chamber in the form of a granulate like Fig. 3 to be used as a construction material. In addition there is also usable heat ! There are no additional by-products as smoke, ash or odor !

Fig. 4  
shows process diagramm .



Fig. 3

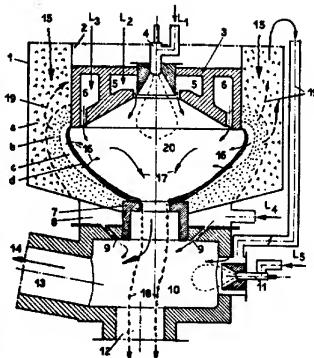


Fig. 4

The flame-chamber (20) as the heart of the Wotschke process is formed by the refuse (15) itself as an continuously flowing and insulating layer (a-b-c-d-) surrounding them in a simple steel casing (1). The flame-chamber has an air-cooled cover (3) and is open at the bottom. When the flame is lit by a gas or oil burner (4) the flame-chamber casing (c) will reach automatically a high working temperature by the right distribution of combustion air (L1, L2 & L3) .

The uncombustibles will form a thin liquid layer (d) on the innerst surface and will automatically flow into the granulating device (18-12) .

The combustibles will vaporize in the layer (c) , pass through the thin smelting film (d) , that has the effect of a wet filter, and forms a dustfree flame (17). The flame - gases pass through the flow-out chamber (10) and the post-combustion chamber (13) to the cooling chamber (14) or chimney.

Since the flame - chamber (20) works without mechanical devices, without a fire-grate or ceramic insulation it can work on refuse of all types, even on those with high calorific-value, such as plastics and oil sludge. But it will also work on wet refuse that is normally difficult to burn. The air-pressure in chamber (20) forces the developing vapors (19) to return from the drying zone (b) and pass on side-way to the flow-out chamber (10) where they will unite the flue gases (17) in order to deodorize. Here the additional air (L4 & L5) and an auxiliary burner (11) guarantee a precise and automatically adjustable combustion even in difficult cases.

The technical installation of a FLK plant here only can be indicated, for example in Fig. 6 .

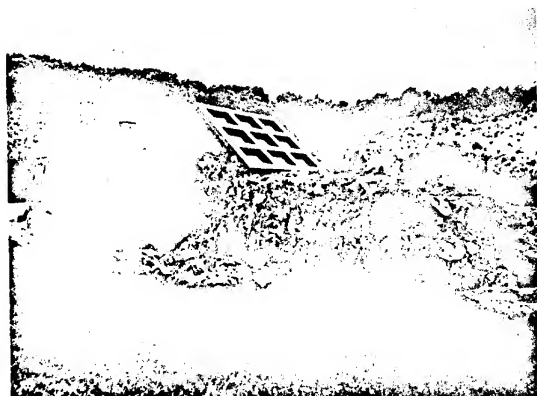


Fig. 5

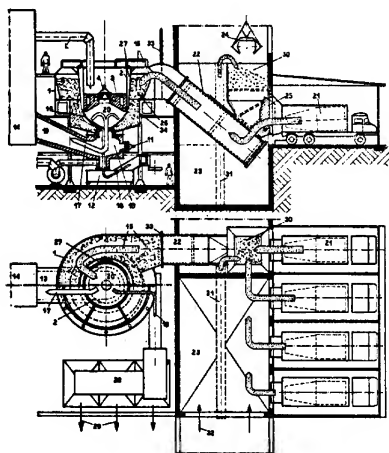


Fig. 6. FLK-plant for household and industrial waste of every kind and calorific value  
Capacity : 5000 kg/hr ; 20 Gcal.

The large feeder (22) corresponds with the well known mobile container like Fig. 5.

The waste is fed into this directly from the waste collecting car (21) or from a collecting container and from there is pushed over a sluice onto a revolving distributor (27).

From there the waste is fed into the upper ring chamber (26) of the oven which has a spiral form with reducing diameter, and then pushed into the lower ring chamber (34) where it will be in the acting range of the flame-chamber (20) so that even large pieces will be melted.

Only in special cases like large chunks of waste, or to overcome weekend periods etc. it might be necessary to stock the waste in an intermediate silo (23) and feed it from here to the large feeder (22).

The granulate resulting from the uncombustible materials in the granulator (12) is gained at (29) as a construction material.  
( See Fig. 3 )

First it has been passed through a sieve or freed from valuable iron-oxide grains by a magnetic separator.

As a result of the basic construction of the FLK plants according to Fig. 6, it is possible to leave the decision, whether a heat-exchanger or a special flue-gas filter should be built into the exhaust line after the erection of the plant itself, when already sufficient amount of experience has been gained through the operation of the plant. This way an eventual misconstruction can be avoided, saving construction, investment and overall costs.

The large post-combustion chamber (13) guarantees perfectly burned and mixed flame-gases before entering the heat-exchanger and contacting exchanger tubes, avoiding so destruction by contamination when burning plastics !

For more information write to :